

Community and Regional Planning 445/545:

Transportation Policy Planning, Fall 2007

Time: 3:40-5:00 PM Tuesday and Thursday,

Location: 130 College of Design

4:40-6:00 PM EST

Instructor:

David Plazak, CTRE, Phone: 296-0814 or 294-8103

E-mail: dplazak@iastate.edu

Office Hours: Immediately before class, or by appointment at CTRE (ISU Research Park Building 4) or College of Design Atrium

Class Web Site: <http://www.ctre.iastate.edu/educweb/crp445/>**Class FTP Site:** <ftp://www.ctre.iastate.edu/>

Username: ctreftp Password: ftpctre Folder: CRP 445 545

Course Description: Transportation policy decisions should be based on their outcomes (e.g. safety, reduced costs for users, economic prosperity, quality of life, "environmental justice", and environmental quality.) Policy and planning decisions should be based on valid and current information and the use of appropriate management information systems and analytical tools. This course will introduce a number of transportation policy topics and the tools necessary to perform policy analysis. Students will be required to complete a semester project involving a current transportation policy issue and apply some of the tools and techniques covered in the course. The focus of the course will be on policy analysis at the state and metropolitan levels, mainly from a public sector perspective.

Grading:

- Mid-Term Exam: 20%
- Class attendance and participation: 10% (mainly based on quality and quantity of class participation)
- Five short issue papers/literature reviews: (2-3 pages): 25%
(5% each--one issue paper will be required for each of the major issue categories covered during the course.)
- Final class term paper/formal presentation: 30%
(Term papers and presentations may be done individually or in teams of two students; more will be expected of teams than of individuals)
- Final Exam: 15% (comprehensive)

Notes: Graduate students enrolled in the class will be expected to prepare and present a considerably more extensive and thorough term paper than undergraduates and to produce higher quality issue papers. They will also be expected to lead discussions on transportation policy issues at times during the semester. These discussions will be based on the five issue papers/literature reviews.

* Distance learning students enrolled in the class will have their attendance and participation grade based upon e-mail and other interaction with the instructor.

Schedule, Textbooks and Readings:

The class schedule by week is shown in the first table below. Generally, the course is organized as a set of classes that cover a major topic. The last two weeks of class will involve 15-20 minute presentations by individual students or teams of two (teams larger than two persons will not be allowed). Both exams will be short answer/short essay format and the final will be comprehensive. They will stress understanding concepts rather than memorizing facts. Questions about student final presentations will be included on the final. Questions from

the readings will appear on both exams.

There will be three textbooks for the course. They are:

- William L. Garrison and Jerry D. Ward, "Tomorrow's Transportation: Changing Cities, Economies, and Lives", Artech House, 2000.
- Vukan R. Vuchic, "Transportation for Livable Cities", Center for Urban Policy Research Press, Rutgers University, 1999.
- Edward Weiner, "Urban Transportation Planning In the United States: An Historical Overview", US Department of Transportation, 1997. (PDF on class web site)

The Vuchic book is relatively inexpensive, so you should try to purchase it. Both books will be put on reserve. These two textbooks' authors have very different views of what transportation policy should be in the United States. In the second table below, the readings from the textbooks are shown. In the table the Garrison and Ward book is referred to as "G" and the Vuchic book as "V". We'll read them both in their entirety. The Vuchic book will be read in order, but we'll skip around a good deal in the Garrison book. The Weiner book will be used mainly at the beginning of the class for historical background.

Other readings will be assigned as appropriate. They will either be on the World Wide Web, handed out in class, or put on reserve.

Class Schedule by Week:

| Week | Tuesday | Thursday |
|------|-------------------------------------------------|------------------------------------------------|
| 1 | Course goals and overview | Introduction to transportation policy analysis |
| 2 | Actors and markets in transportation | Paying for transportation |
| 3 | Transportation safety I | Transportation safety II |
| 4 | Transportation safety III | Transportation safety IV |
| 5 | Environmental quality I | Environmental quality II |
| 6 | Environmental quality III | Environmental quality IV |
| 7 | International transportation policies | Mid-term examination |
| 8 | Economic impacts I | Economic impacts II |
| 9 | Economic impacts III | Economic impacts IV |
| 10 | Quality of life I | Quality of life II |
| 11 | Quality of life III | Equity and environmental justice I |
| 12 | Equity and environmental justice II | Transportation security |
| 13 | Focus on freight | Transportation in the future |
| 14 | Student final presentations I | Student final presentations II |
| 15 | Student final presentations III | Student final presentations IV |

| Textbook Chapters and Other Reading Assignments | |
|-------------------------------------------------|----------------------------------------------------------|
| Week 1 | G1-2; G14-16; and V1-2 |
| Week 2 | G8 and V3-4 |
| Week 3 | Safety readings to be assigned |
| Week 4 | Safety readings to be assigned |
| Week 5 | G13 |
| Week 6 | Environmental quality readings to be assigned |
| Week 7 | None (Exam) |
| Week 8 | Economic impact readings to be assigned |
| Week 9 | Economic impact readings to be assigned |
| Week 10 | G3-7 and V5-6 |
| Week 11 | G9-12 |
| Week 12 | Equity and environmental justice readings to be assigned |
| Week 13 | G17-25 and V7-8 |
| Week 14 | None (Student Presentations) |
| Week 15 | None (Student Presentations) |

Lecture Overheads (On Class Web Site)

(Microsoft Power Point Files; some of these files are very large due to the inclusion of illustrations.)

- **Week 1**

Course goals and overview

Introduction to transportation policy analysis

- **Week 2**

Actors and markets in transportation

Paying for transportation: transportation finance

- **Week 3**

Transportation safety: overview

Transportation safety: vehicles and operators

- **Week 4**

Transportation safety: guideways

Transportation safety: high crash locations and safety analysis

- **Week 5**

Environmental quality: energy use and efficiency

Environmental quality: air pollution

- **Week 6**

Environmental quality: noise

Environmental quality: global environmental issues and environmental impact models

- **Week 7**

International transportation system and policy comparisons

Mid-Term Examination

- **Week 8**

Economic impact and development: benefit/cost and overall concepts

Economic impact and development: transportation investments and economic development

- **Week 9**

Economic impact and development: analytical tools

Economic impact and development: asset management concepts and GASB 34

- **Week 10**

Quality of life: transportation and land use interactions, including congestion

Quality of life: curing congestion, including through congestion pricing

- **Week 11**

Quality of life: transportation design implications in the quest for quality of life

Equity and environmental justice: equity concepts and impact assessment

- **Week 12**

Equity and environmental justice: equity of service

Transportation security

- **Week 13**

Focus on freight transportation

Future transportation policy issues and trends

Web Links Mentioned In Class for Reading and Reference

Transportation Safety Web Sites

National Transportation Safety Board (NTSB)

<http://www.nts.gov/>

Investigates major transportation accidents, e.g. airline crashes, and issues recommendations.

National Highway Traffic Safety Administration (NHTSA)

<http://www.nhtsa.dot.gov/>

An agency within the US Department of Transportation that regulates motor vehicle safety and that provides safety information for consumers.

Fatality Analysis Reporting System (FARS)

<http://www.nhtsa.dot.gov/people/ncsa/fars.html>

Web site that allows queries of a database of fatal highway crashes in the United States.

Federal Highway Administration's Safety Programs (FHWA)

<http://safety.fhwa.dot.gov/>

A unit of the US Department of Transportation concerned with funding highways and improving highway safety.

Insurance Institute for Highway Safety (IIHS)

<http://www.hwysafety.org/>

Organization funded by the insurance industry that promotes highway safety and that provides consumer information.

Iowa Safety Management System Coordination Committee (Iowa SMS)

<http://www.iowasms.org/>

A consortium of agencies in Iowa involved in improving highway safety. Site contains a great deal of Iowa data and study results.

Institute of Transportation Engineers (ITE)

<http://www.ite.org/>

Membership organization web site that contains information on various highway safety issues, including red light running, traffic calming, and road safety audits.

Transportation and the Environment Web Sites

US Environmental Protection Agency

<http://www.epa.gov>

Noise Pollution Clearinghouse

<http://www.nonnoise.org>

Asset Management and GASB 34 Web Sites

The Center for Transportation Research and Education's GASB 34 web site

<http://www.ctre.iastate.edu/gasb34/index.htm>

Transportation and Quality of Life Web Sites

Texas Transportation Institute's (TTI) 2001 Urban Mobility Study

<http://mobility.tamu.edu/>

Walkable Communities, Inc.

<http://www.walkablecommunities.org>

Environmental Justice Web Sites

US Department of Transportation Environmental Justice Web Site
<http://www.fhwa.dot.gov/environment/ej2.htm>

Paper Guidelines for CRP 445/545

Five Short Issue Papers

The goal here is for you to be able to do a concise and brief literature review on a specific policy topic. Each short paper should focus on a very specific issue or project related to one of the five main issue areas of the course. Papers should be no more than three pages long, double-spaced.

A good description of the general structure of a literature review was prepared at the University of Wisconsin and is on the World Wide Web at:

<http://www.wisc.edu/writing/Handbook/ReviewofLiterature.html>

One of the most useful tools for reviewing literature in transportation is the Transportation Research Information Service (TRIS), which is supported by the Transportation Research Board (TRB) of the National Academy of Science and the US Department of Transportation. TRIS and a similar international research literature database are accessible on the web at:

<http://ntlsearch.bts.gov/tris/index.do>

The five short papers (with their general topics) will be due as follows:

- Transportation safety, Week 5, Thursday September 20th
- Environmental quality and energy, Week 7, *Tuesday* October 2nd (the Mid-Term will be on Thursday the 4th)
- Economic impact, Week 10, Thursday October 25th
- Quality of life, Week 12, Thursday November 8th
- Equity and environmental justice, Week 14, Thursday November 29th

No late submissions of these papers will be accepted. On the due date, I will ask all the graduate students to be prepared to briefly present their issues and findings for discussion in class. We may only discuss one or two issues, depending on how interesting they are to the class.

Final Papers and Projects

The final class project should entail a thorough analysis of a transportation policy issue or project of interest to the student. The instructor will expect students to submit their proposed topic before the mid-term exam. Projects should consist of a brief literature review and an analysis of the issue, topic, or project. The instructor may work with students on their topic and is available for consultation about topics and research. The project will include a paper of no more than 15 pages and a presentation to the class. Both the presentation and paper will be graded on content and quality of presentation. The paper should be prepared as if you are a consultant or senior policy analyst working for a transportation agency that needs to make an important decision. You should include a set of recommendations. Teams of two are acceptable on the final class projects, except that two graduate students cannot work together on a project. Teams including one graduate student and one undergraduate student are encouraged. Teams and graduate students will be expected to produce higher quality results than undergraduate students working alone.

Final student presentations will occur in class on November 27 and 29 and December 4 and 6. There are roughly 25 students in the class, so the maximum time available for any presentation will be 12-15 minutes. With teams of two possible, some time may be freed up; teams of two should limit their presentation to 18-20 minutes. Dates and times will be assigned on a first-come, first-served basis later in the semester.